Fig. 1

(PRIOR ART)

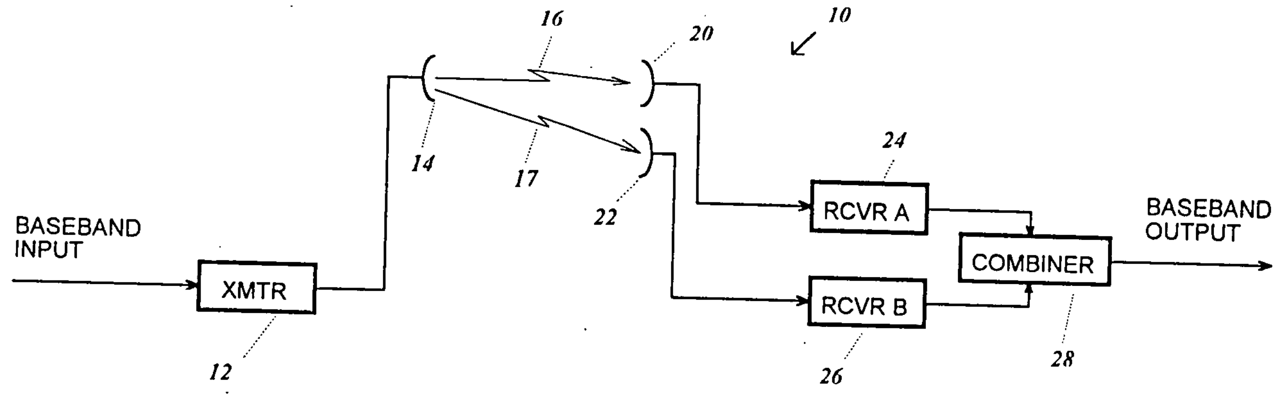


Fig. 2

(PRIOR ART)

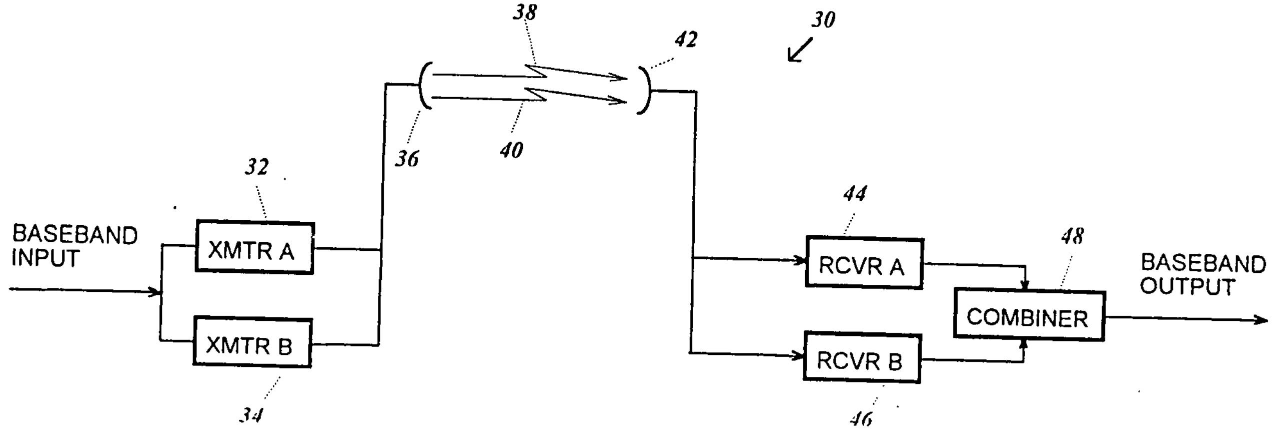
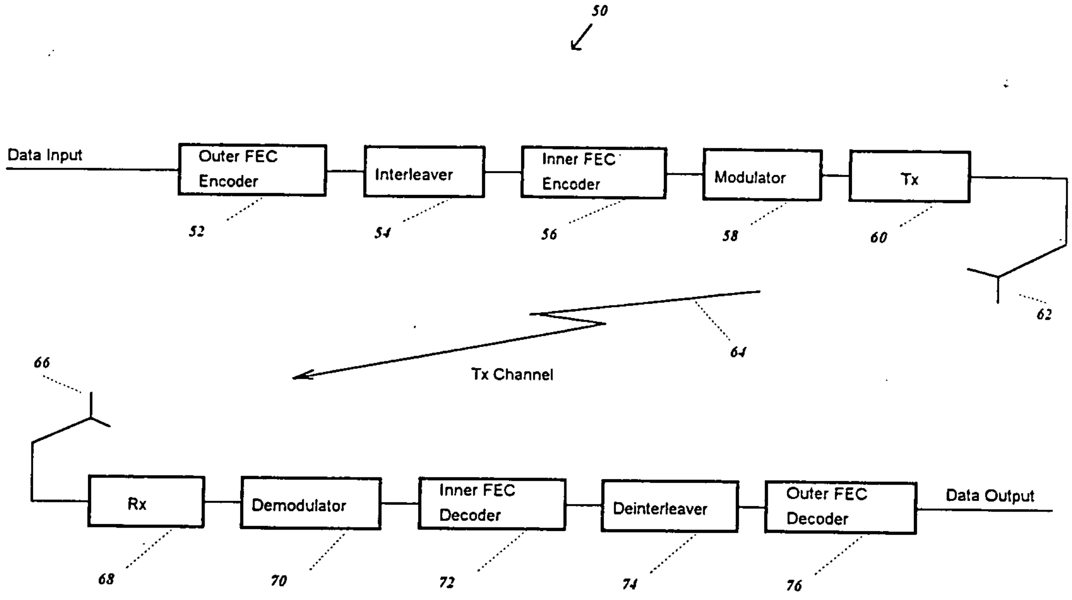


Fig. 3



50
Data Input
Outer FEC Encoder
Interleaver
Inner FEC Encoder
Modulator
Tx
52
54
56
58
60
62
64
Tx Channel
66
Rx
Demodulator
Inner FEC Decoder
Deinterleaver
Outer FEC Decoder
Data Output
68
70
72
74
76

Fig. 4

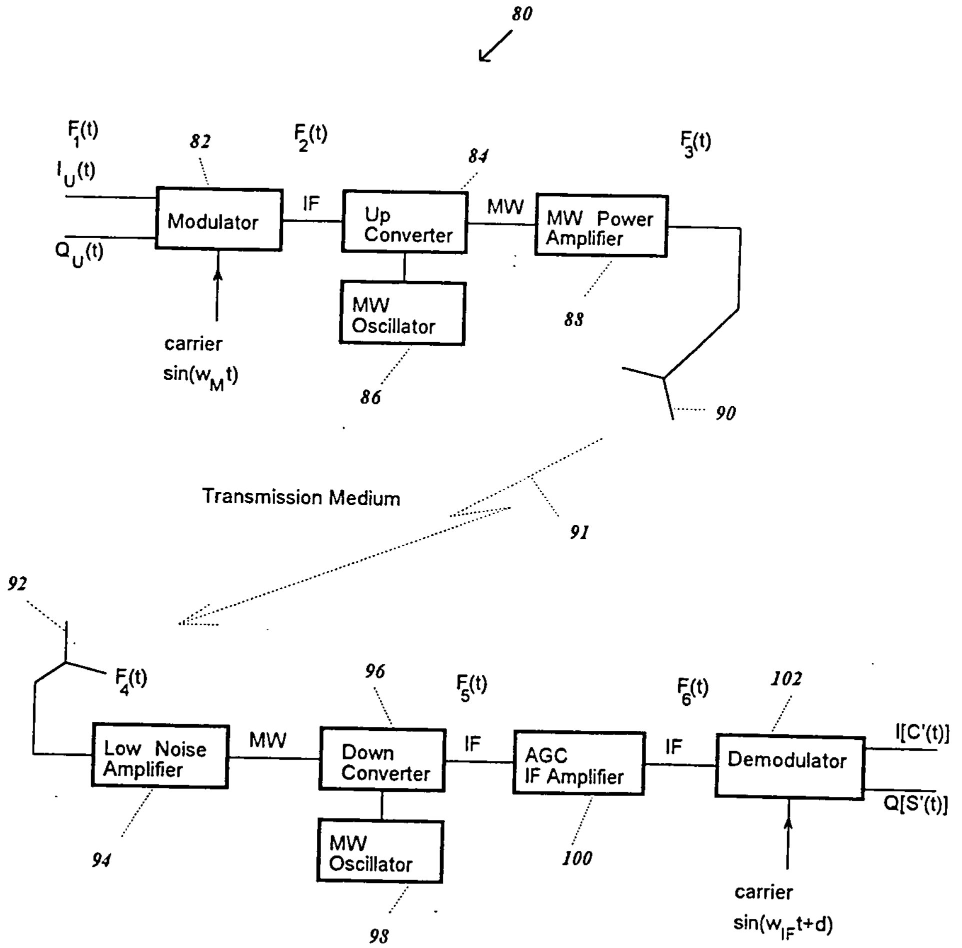

80
F1(t)
IU(t)
QU(t)
82
Modulator
carrier
sin(wMt)
F2(t)
IF
84
Up Converter
MW Oscillator
86
MW
MW Power Amplifier
88
F3(t)
90
Transmission Medium
91
92
F4(t)
Low Noise Amplifier
94
MW
96
Down Converter
MW Oscillator
98
F5(t)
IF
AGC IF Amplifier
100
F6(t)
IF
102
Demodulator
I[C'(t)]
Q[S'(t)]
carrier
sin(wIFt+d)

Fig. 5

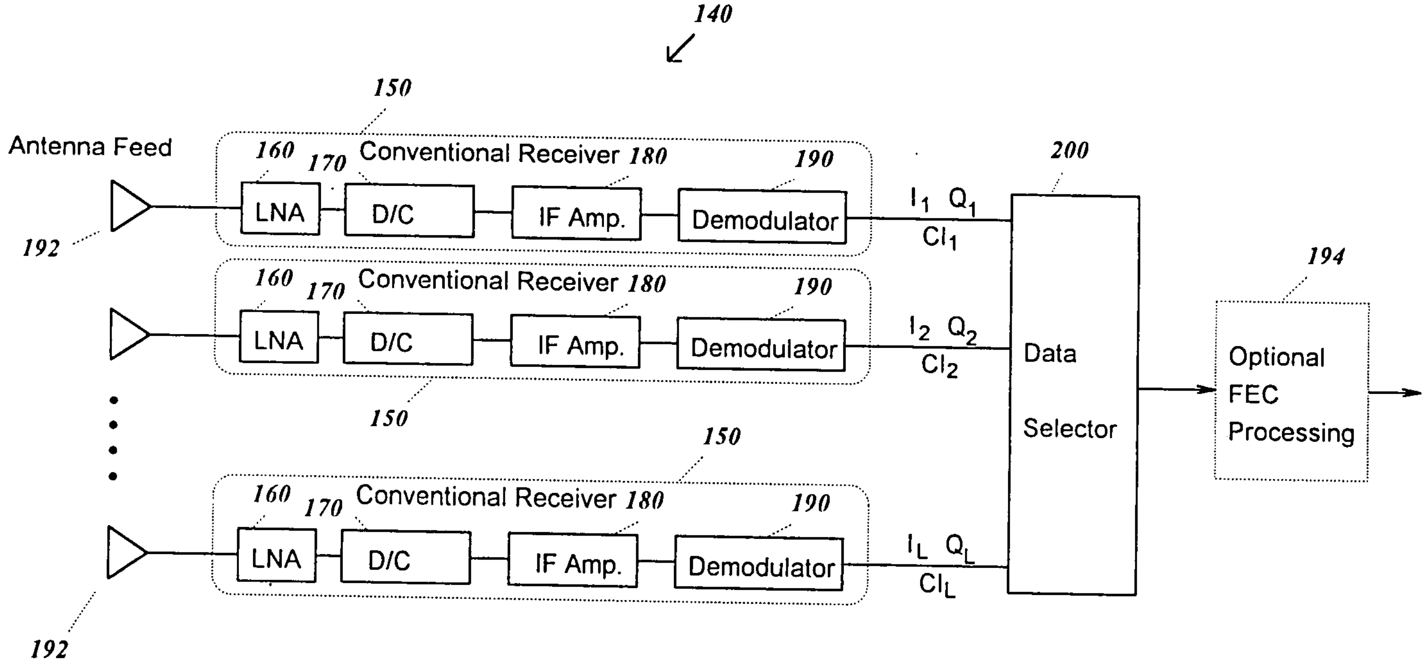

140
150
Antenna Feed
160
170
Conventional Receiver 180
190
192
LNA
D/C
IF Amp.
Demodulator
I_1 Q_1
CI_1
I_2 Q_2
CI_2
150
150
I_L Q_L
CI_L
192
200
Data
Selector
194
Optional
FEC
Processing

Fig. 6 Block Diagram of the Diversity Signal Data Selector System

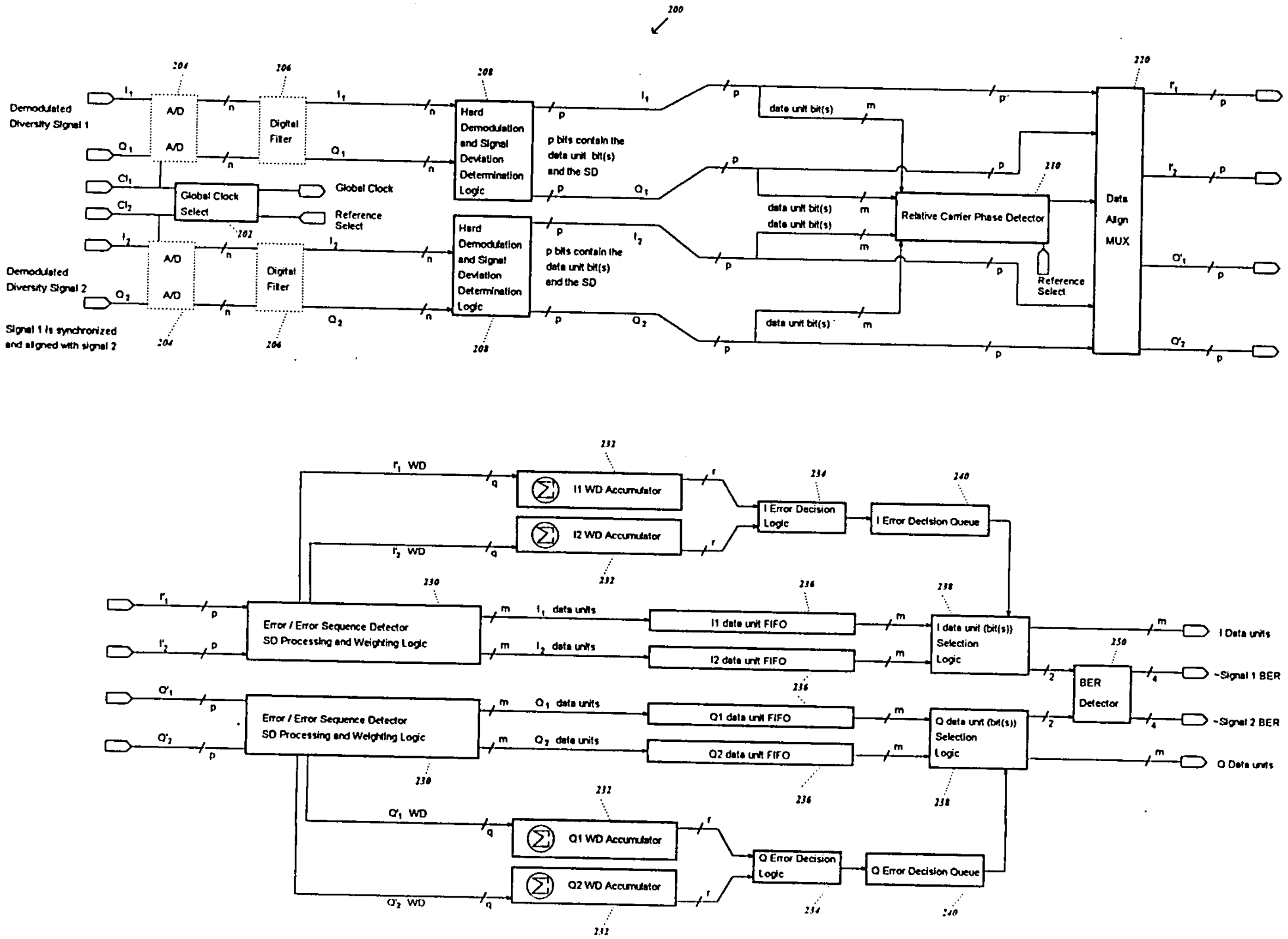
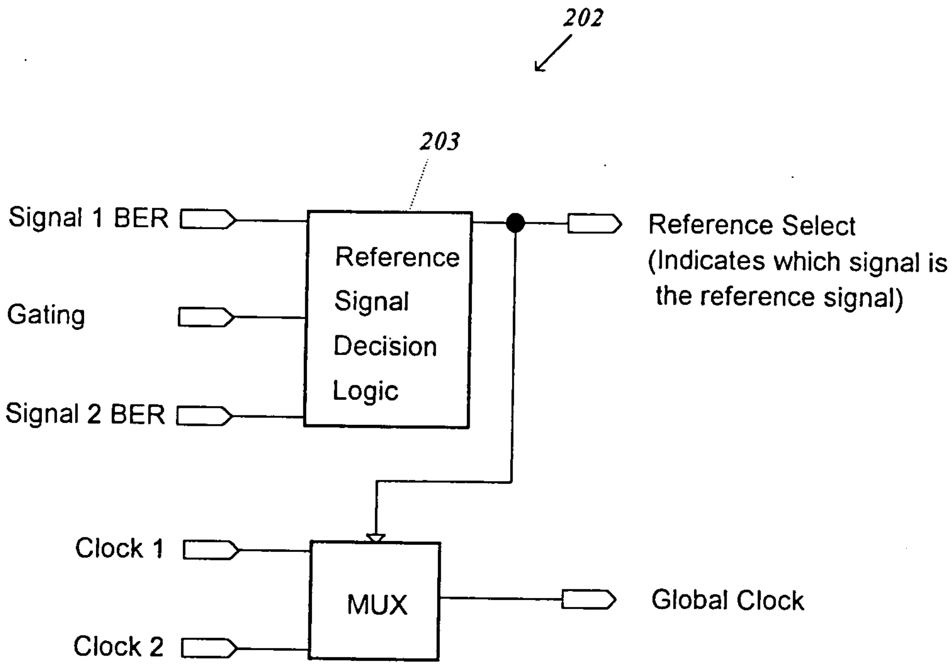
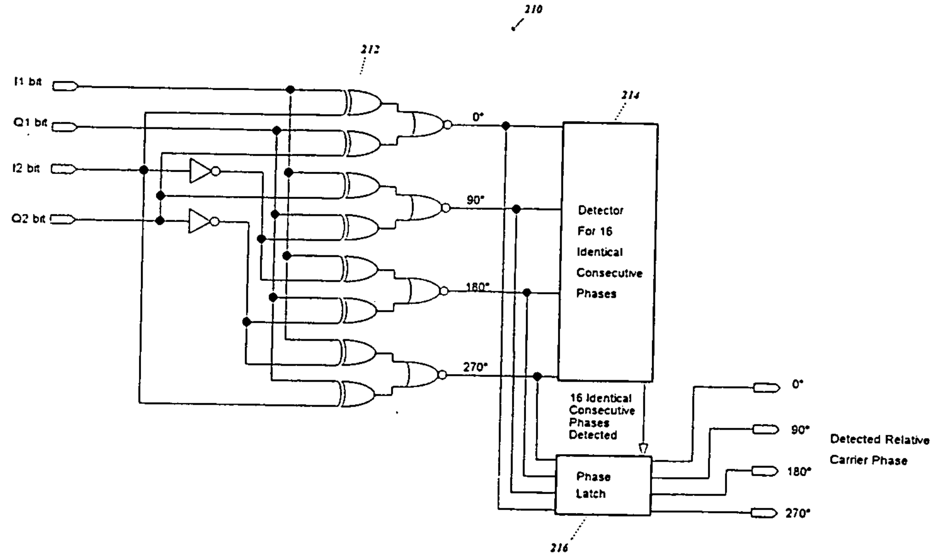


Fig. 7 Global Clock Select



Relative Carrier Phase Detector



Data Align Multiplexer

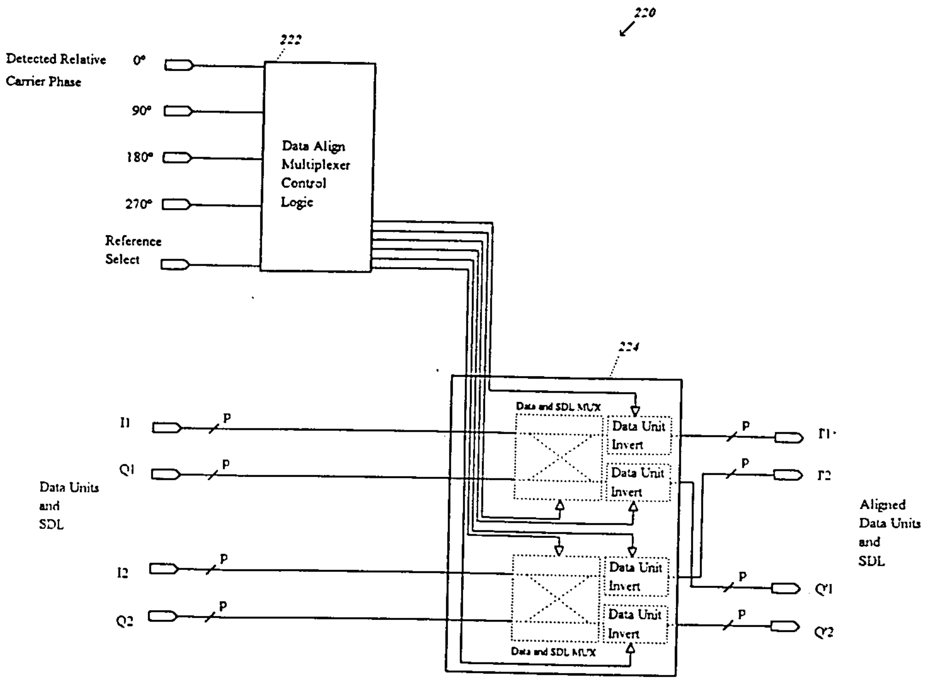


Fig. 9 BER Detector

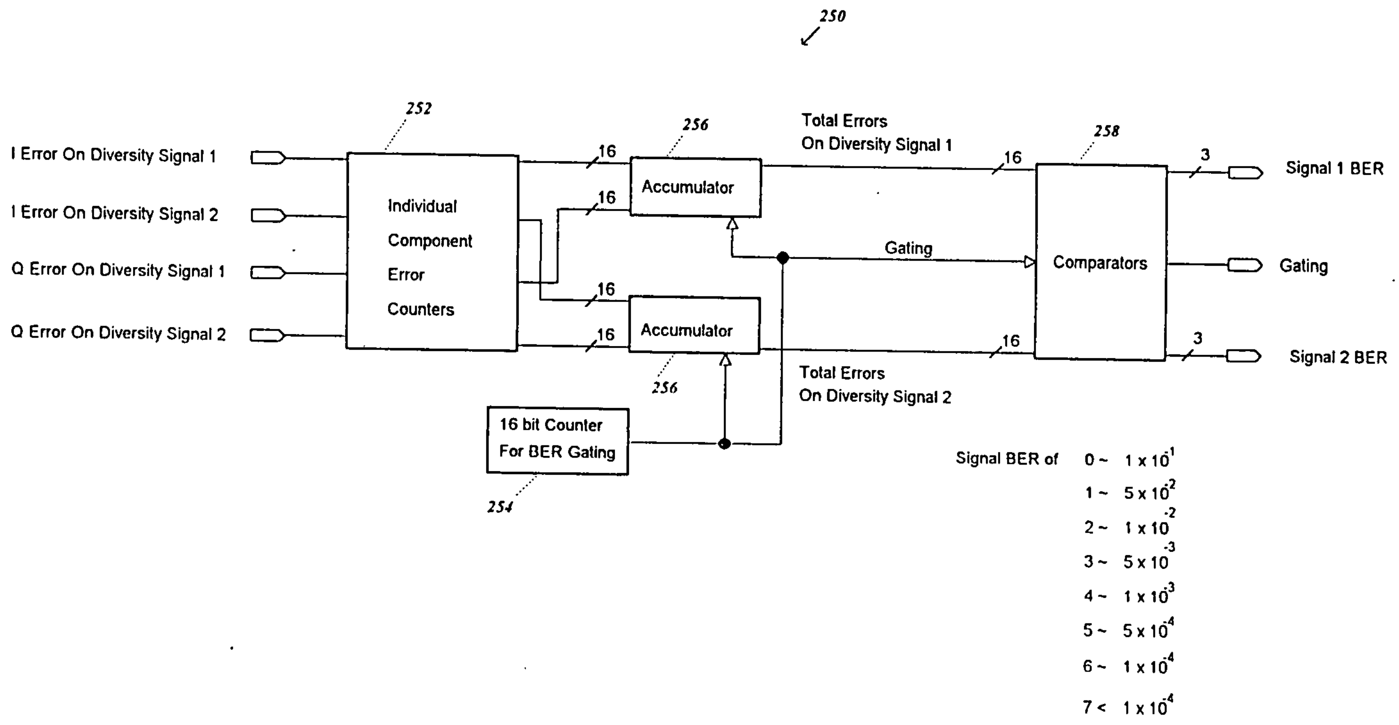


Fig. 10 Expected and Measured BER for 9QPR Radio Using Diversity Signal Selection

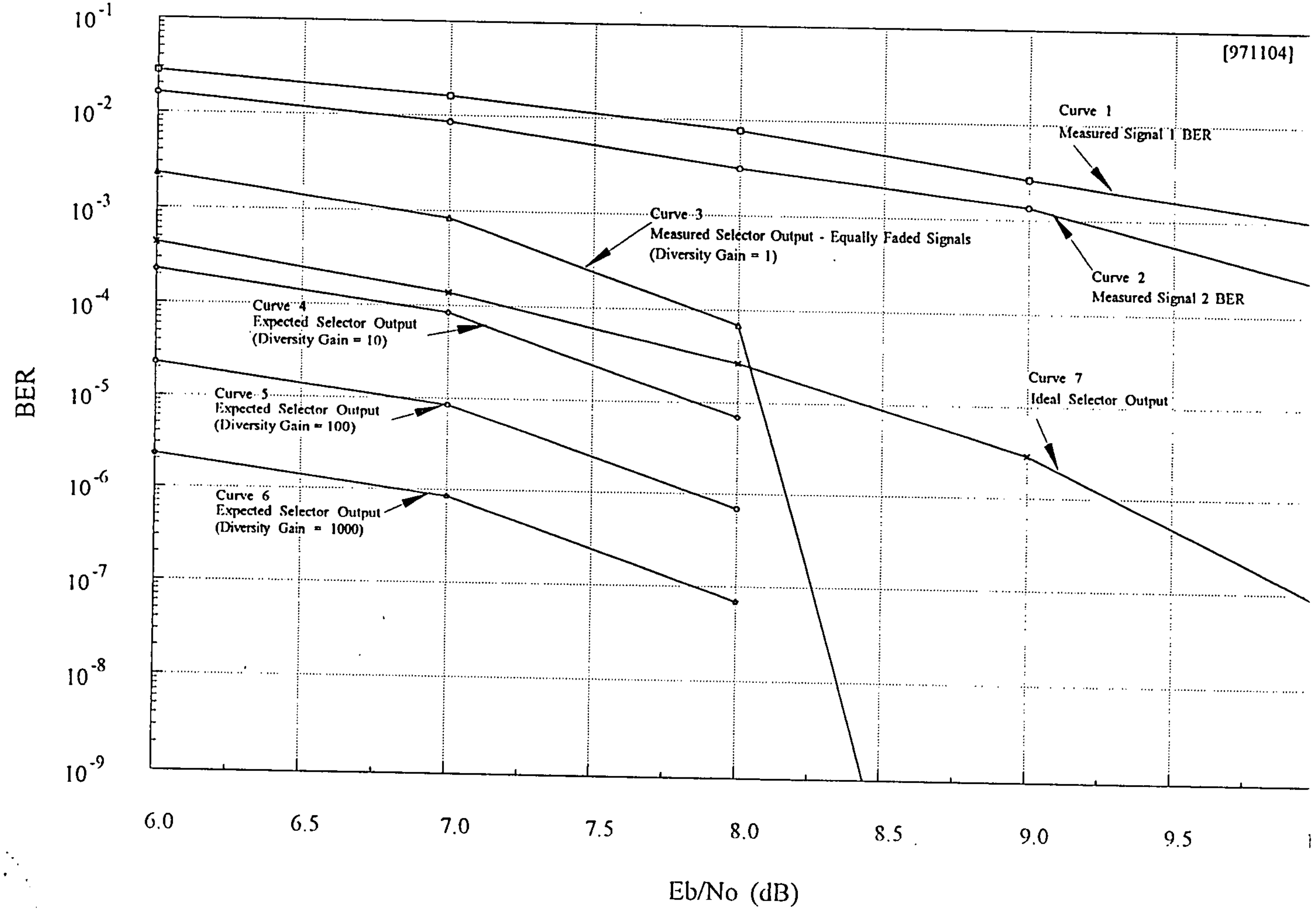


Fig. 11 Expected BER Characteristics of Unprotected and Diversity Protected QPSK Radio